

IN THE CLAIMS:

Amend claims 1-4 and 6-18 as follows:

1.(Currently Amended)An adaptive signal weighting system including a signal path for transmitting an ~~electrical~~-information signal of a predetermined bandwidth through said system, said system further comprising:

- filter means disposed in said signal path for varying a ~~the~~-gain impressed on a ~~the~~ portion of said information signal within a first select spectral region within said predetermined bandwidth by a first variable gain factor to provide a filtered signal, said first variable gain factor varying in response to and as a function of a first control signal;
- means, responsive to said information signal, for generating said first control signal in accordance with a frequency value wherein approximately one-half of the energy of said information signal is below said frequency value;
- gain control means disposed in said signal path and responsive to said filtered signal for varying ~~the~~-signal gain impressed on said filtered signal substantially throughout said predetermined bandwidth by a second variable gain factor to provide an output signal, said second variable gain factor varying in response to and as a function of a second control signal; and
- means for generating said second control signal in response to and as a function of ~~the~~-signal energy of said information signal substantially within a second select spectral region within said predetermined bandwidth.

2.(Currently Amended)A system according to claim 1 wherein said means for generating said second control signal comprises ~~includes~~-means for detecting ~~the~~-signal energy of said information signal below about 5 KHz.

3.(Currently Amended)A system according to claim 1, wherein said filter means comprises includes means for varying the first variable gain factor impressed on said portion of said information signal so that said first variable gain factor varies from amplification for signals having relatively high energy within said second select spectral region to attenuation for signals having relatively low energy within said second select spectral region.

4.(Currently Amended)A system according to claim 1, wherein said filter means comprises includes frequency discrimination means for detecting said portion of said information signal within said first select spectral region and for generating a frequency discrimination output signal representative of said portion, and second gain control means coupled to said frequency discrimination means for varying the gain impressed on said frequency discrimination output signal in response to and as a function of said first control signal.

5.(Original) A system according to claim 4, wherein said frequency discrimination means senses signal energy of said information signal above about 800 Hz.

6.(Currently Amended)A system according to claim 5, wherein said means for generating said first control signal comprises includes a means for notch filtering and sensing the one-half energy frequency value of said information signal.

7.(Currently Amended)A system according to claim 1; wherein said means for generating said first control signal comprises includes first detection means for detecting the  $\alpha$ -frequency value wherein about half of the signal energy of said information signal is below said frequency value.

8.(Currently Amended)A system according to claim 7, wherein said first detection means each comprises includes

a variable notch filter that receives and filters said information signal and provides a notch filtered signal value, wherein said notch filter includes a notch set as a function of said first control signal;

a mixer that receives and mixes said notch filtered signal value and a value indicative of said information signal, and provides a mixed signal indicative thereof; and

an integrator, that integrates said mixed signal, to provide said first control signal.

9.(Currently Amended)A system according to claim 1, wherein said filter means comprises includes means for varying the first variable gain factor impressed on said portion of said information signal so that said first variable gain factor varies from attenuation for signals having relatively high energy levels within said second select spectral region to amplification of low energy signals having relatively low energy levels within said second select spectral region.

10.(Currently Amended) An adaptive signal weighting system including a signal path for transmitting an ~~electrical~~ information signal of a predetermined bandwidth through said system, said system ~~further comprising~~:

- filter means disposed in said signal path for varying ~~a the~~ gain impressed on ~~a the~~ portion of said information signal within a first select spectral region within said predetermined bandwidth by a first variable gain factor to provide a filtered signal, said first variable gain factor varying in response to and as a function of a first control signal;
- a frequency detection circuit that determines a frequency value wherein approximately one-half of the energy of said information signal is below said frequency value, and generates

said first control signal in response to and in accordance with said frequency value wherein approximately one-half of the energy of said information signal is below said frequency value;

- gain control means disposed in said signal path and coupled to said filter means for varying the signal gain impressed on said information signal substantially throughout said predetermined bandwidth by a second variable gain factor to provide an output signal, said second variable gain factor varying in response to and as a function of a second control signal; and
- means for generating said second control signal in response to and as a function of the signal energy of said information signal substantially within a second ~~third~~-select spectral region within said predetermined bandwidth.

11.(Currently Amended) A system for decoding an electrical-encoded information signal of a predetermined bandwidth previously encoded so that said encoded information signal can be recorded on or transmitted through a dynamically-limited, frequency dependent channel having a dynamically-limited narrower portion in a first spectral region than in at least one other spectral region of said predetermined bandwidth, said system comprising:

- input means for receiving said encoded information signal;
- a signal transmission path coupled to said input means and responsive to said encoded information signal;
- output means coupled to said signal transmission path for providing a decoded information signal;
- gain control means disposed in said signal transmission path for varying a first the signal gain impressed on said encoded information signal substantially throughout said predetermined

bandwidth to provide a gain compensated signal, said first signal gain varying in response to and as a function of a first control signal;

- filter means for generating a filtered information signal disposed in said signal transmission path and coupled to said gain control means for impressing a second variable gain on a the portion of said gain compensated information signal substantially within said first spectral region so as to deemphasize said portion with respect to a the remaining portions of said gain controlled information signal, said second variable gain varying in response to and as a function of a second control signal;
- means for generating said first control signal in response to and as a function of the signal energy of said information signal within a second spectral region of said filtered information signal; and
- means for generating said second control signal in accordance with a frequency value wherein approximately one-half of the energy of said filtered information signal is below said frequency value.

12.(Currently Amended) A system according to claim 11, wherein said means for generating said second control signal comprises includes

a variable notch filter that receives and filters said filtered information signal and provides a notch filtered signal value, wherein said notch filter includes a notch set as a function of said first control signal;

a mixer that receives and mixes said notch filtered signal value and a value indicative of said information signal, and provides a mixed signal indicative thereof; and

an integrator, that integrates said mixed signal, to provide said second control signal.

13.(Currently Amended) A system according to claim 11, wherein said means for generating said second control signal comprises includes

a low pass filter that filters said filtered information signal to provide a first filtered signal;

an amplifier that receives and amplifies said first filtered signal and provides a first amplified signal;

a first absolute value detector that receives said first amplified signal and provides a first absolute signal indicative thereof;

a second absolute value detector that receives said filtered information signal and provides a second absolute signal indicative thereof;

a comparator that compares said first absolute signal and said second absolute signal and provides a control signal; and

means, responsive to said control signal, for generating said second control signal.

14.(Currently Amended) A system according to claim 11, wherein said means for generating said first control signal comprises includes-first detection means for detecting said signal energy of said filtered information signal within asaid-second spectral region that includes about one-half of the energy of said filtered information signal.

15.(Currently Amended) A system according to claim 14, wherein said first detection means comprises includes-means for generating a D.C. signal as a function of detected the corresponding signal energy detected.

16.(Currently Amended) A system according to claim 15, wherein said means for generating a D.C. signal comprises a ~~includes an~~ root mean square (RMS) detector.

17.(Currently Amended) A system according to claim 16, wherein said first ~~and second gain~~ control means ~~each~~ comprises a voltage control amplifier.

18.(Currently Amended)) A system according to claim 17, wherein ~~each of~~ said amplifiers is set for signal expansion at substantially the same expansion ratio.

19.(Original) A system according to claim 18, wherein said expansion ratio is 1:2.